

BIRCH, STEWART, KOLASCH & BIRCH, LLP

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COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT AND DESIGN APPLICATIONS

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated next to my name; that I verily believe that I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Insert Title: PRODRUGS

Fill in Appropriate
Information -
For Use Without
Specification
Attached:

the specification of which is attached hereto. If not attached hereto,
the specification was filed on February 12, 1999 as
United States Application Number 09/249,317 ;
and amended on _____ (if applicable) and/or
the specification was filed on _____ as PCT
International Application Number _____ ; and was
amended under PCT Article 19 on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months (six months for designs) prior to this application, and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
<u>9800452-6</u> (Number)	<u>Sweden</u> (Country)	<u>February 13, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<u>9801216-4</u> (Number)	<u>Sweden</u> (Country)	<u>April 3, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<u>9800469-0</u> (Number)	<u>Sweden</u> (Country)	<u>February 16, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<u>9803438-2</u> (Number)	<u>Sweden</u> (Country)	<u>October 7, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<u>98/7267</u> (Number)	<u>South Africa</u> (Country)	<u>August 13, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional applications(s) listed below.

Insert Provisional
Application(s):
(if any)

<u>(Application Number)</u>	<u>(Filing Date)</u>
<u>(Application Number)</u>	<u>(Filing Date)</u>

All Foreign Applications, if any, for any Patent or Inventor's Certificate Filed More than 12 Months (6 Months for Designs) Prior to the Filing Date of This Application:

Country	Application Number	Date of Filing (Month/Day/Year)
_____	_____	_____
_____	_____	_____

Insert Requested
Information:
(if appropriate)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States and/or PCT application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States and/or PCT application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Insert Prior U.S.
Application(s):
(if any)

<u>PCT/SE98/01467</u> (Application Number)	<u>August 14, 1998</u> (Filing Date)	<u>Pending</u> (Status - patented, pending, abandoned)
<u>(Application Number)</u>	<u>(Filing Date)</u>	<u>(Status - patented, pending, abandoned)</u>

I hereby appoint the following attorneys to prosecute this application and, an international application based on this application and to transact all business in the Patent and Trademark Office connected therewith and in connection with the resulting patent based on instructions received from the entity who first sent the application papers to the attorneys identified below, unless the inventor(s) or assignee provides said attorneys with a written notice to the contrary:

Raymond C. Stewart	(Reg. No. 21,066)	Terrell C. Birch	(Reg. No. 19,382)
Joseph A. Kolasch	(Reg. No. 22,463)	James M. Slattery	(Reg. No. 28,380)
Bernard L. Sweeney	(Reg. No. 24,448)	Michael K. Mutter	(Reg. No. 29,680)
Charles Gorenstein	(Reg. No. 29,271)	Gerald M. Murphy, Jr.	(Reg. No. 28,977)
Leonard R. Svensson	(Reg. No. 30,330)	Terry L. Clark	(Reg. No. 32,644)
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Joe McKinney Muncy	(Reg. No. 32,334)	Donald J. Daley	(Reg. No. 34,313)
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Full Name of First
or Sole Inventor:
Insert Name of
Inventor
Insert Date This
Document is Signed
→

Insert Residence
Address
Insert Citizenship
→

Insert Post Office
Address
→

Full Name of Second
Inventor, if any:
see above

Full Name of Third
Inventor, if any:
see above

Full Name of Fourth
Inventor, if any:
see above

Full Name of Fifth
Inventor, if any:
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Full Name of Sixth
Inventor, if any:
see above

GIVEN NAME/FAMILY NAME Lourdes SALVADOR		INVENTOR'S SIGNATURE <i>Lourdes R. Salvador</i>	DATE* October 26, 1999
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POST OFFICE ADDRESS (Complete Street Address including City, State & Country) Saltangsvagen 1B, SE-602 22 Norrkoping, Sweden			
GIVEN NAME/FAMILY NAME Stefan LINDSTROM		INVENTOR'S SIGNATURE <i>Stefan L</i>	DATE* 9/9/01
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POST OFFICE ADDRESS (Complete Street Address including City, State & Country) Marmorsvagen 8B, SE-752 44 Uppsala, Sweden			
GIVEN NAME/FAMILY NAME Christer SAHLBERG		INVENTOR'S SIGNATURE <i>Christer S</i>	DATE* October 20, 1999
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GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE <i>Christer S</i>	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			

Full Name of Seventh
Inventor, if any:
see above

Full Name of Eighth
Inventor, if any:
see above

Full Name of Ninth
Inventor, if any:
see above

Full Name of Tenth
Inventor, if any:
see above

Full Name of Eleventh
Inventor, if any:
see above

Full Name of Twelfth
Inventor, if any:
see above

PATENT
Attorney Docket No. 1718-163P

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: ZHOU, Xiao-Xiong et al.

SERIAL No.: 09/249,317 GROUP: 1623

FILED: February 12, 1999 EXAMINER: J. Wilson

FOR: PRODRUGS

DECLARATION SUBMITTED UNDER 37 C.F.R. § 1.132

Honorable Commissioner
Of Patents and Trademarks
Washington, D.C. 20231

Sir:

I, Dr. Xiao-Xiong Zhou Medivir AB, Lunastigen 7, S-141 44 Huddinge, Sweden,
do hereby declare the following:

I have attached a copy of my curriculum vitae to this Declaration.

I am Director of Medicinal Chemistry at Medivir AB, a pharmaceutical research
company employing around 90 research scientists, of which 53 are PhDs. I am familiar
with the above referenced patent application, as well as the development, usages and
properties of prodrug compounds.

I have read and understand the subject matter of the Office Action of January 31,
2001.

SERIAL No.: 09/249,317

The following comments are offered in support of the patentability of the instant invention.

The empty bracket symbol, " $()_x$ ", where x is 0, 1, 2, etc., that is used throughout the Specification and Claims of the instant application is a widely used convention for methylene homologues; i.e., for homologues varying by the presence of one or more contiguous $-\text{CH}_2-$ units. In the case where x is zero, there is no methylene group present and the empty bracket then represents a bond. One skilled in the art of medicinal chemistry, particularly prodrugs, would easily understand the meaning of the empty bracket symbol.

In the appendix to this Declaration I have attached a number of examples taken from the Derwent patent abstracting service and that show the empty bracket symbol in use. Note that the authors of such abstracts regard the symbol as so clear that no further definition of it is present, or required, in the key.

In my opinion, no medicinal chemist would be in doubt as to the significance of the empty bracket symbol in the context of a patent Specification describing and exemplifying prodrugs of active compounds, where the prodrug moiety comprises (in part) unbranched alkyl chains (i.e. methylene homologues) of various lengths. However, if it were desirable to avoid using shorthand conventions for the intended homologues, then I believe that it is crystal clear that the symbol " $(\text{CH}_2)_x$ " should be put in the place of " $()_x$ ".

SERIAL No.: 09/249,317

The undersigned hereby declares that all statements made herein based upon knowledge are true, and that all statements made based upon information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATED: 27 April 2001


Dr. Xiao-Xiong Zhou

Enclosures: As stated above